

TAF Generation: Status and Plans

Office of Science and Technology
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Overview

- Current Capabilities
- Current Plans
- Options for the Future

AvnFPS Features

- Monitoring
- Editing
- Quality Control
 - Text
 - Climatology
- Transmission Control
- Guidance Display



AvnFPS Monitoring

File Options Help

TAF Editor TWB Editor Backup

DATA-all INGEST-all XMIT Queue

		METAR	persistence 4hr	ltg	grid	Editor Shortcuts			
KBWI	<input type="checkbox"/>	TAF 11:26 MTR 13:54	tpo wnd vsb wx cig	wnd vsb wx cig	ts	wnd wx sky	Amd	Rtd	Cor
KDCA	<input type="checkbox"/>	TAF 11:26 MTR 13:51	tpo wnd vsb wx cig	wnd vsb wx cig	ts	wnd wx sky	Amd	Rtd	Cor
KIAD	<input type="checkbox"/>	TAF 11:26 MTR 14:05	tpo wnd vsb wx cig	wnd vsb wx cig	ts	wnd wx sky	Amd	Rtd	Cor
KALB	<input type="checkbox"/>	TAF 14:01 MTR 13:51	tpo wnd vsb wx cig	wnd vsb wx cig	ts	wnd wx sky	Amd	Rtd	Cor
KCRW	<input type="checkbox"/>	TAF 11:38 MTR 13:54	tpo wnd vsb wx cig	wnd vsb wx cig	ts	wnd wx sky	Amd	Rtd	Cor
KPIT	<input type="checkbox"/>	TAF 11:43 MTR 13:51	tpo wnd vsb wx cig	wnd vsb wx cig	ts	wnd wx sky	Amd	Rtd	Cor

AvnFPS Editing

File Options Edit Help

Viewer Editor

Load QC Save Restore Send Insert Matthew

KDCA KIAD

FTUS41 KIAD 281700 Rtn Amd Rtd Cor Clear

```

KIAD 281301Z 281312 34005KT P6SM SCT025 OVC050
FM1500 33006KT P6SM SCT045 BKN150
TEMPO 1519 BKN045
FM1900 26008KT P6SM VCTS BKN060CB
FM0200 VRB05KT P6SM SCT060=
  
```

Tools: AdjustTimes Apply

Site ID: KIAD Flight Categories: VFR MVFR IFR LIFR

Metars All Metars AVN-MOS NGM-MOS ETA-profile Grids

Show Flight Categories Show Headers Show Decoded Num Hours 6

T	TIME	WIND	VSBY	WX	SKY CONDITION	SLP	TT	DP	ALT	PCP
M	281251	35004	10		OVC050	158	73	68	001	0000
S	281204	05004	4	-RA BR	FEW029 SCT040 OVC048		70	68	999	0000
M	281151	VRB03	2 1/2	-RA BR	FEW031 OVC041	154	69	67	999	0034
S	281134	34006	2 1/2	-RA BR	FEW003 SCT009 OVC042		70	66	000	0030
S	281129	35004	1 1/2	RA BR	FEW004 BKN015 OVC044		70	66	000	0030
S	281124	34006	3/4	+RA BR	SCT004 BKN011 OVC044		70	66	000	0028
S	281109	28016G19	1/2	+RA FG	OVC004		72	70	999	0000
M	281051	19005	3	-RA BR	OVC004	146	73	71	997	0000
M	280951	00000	4	BR	OVC004	142	73	71	996	0000
M	280851	19003	4	BR	OVC004	138	73	72	995	

AvnFPS Text Quality Control

```
KDCA 282320Z 290024 34006KT P6SM SCT035 BKN060  
FM0100 VRB03KT P6SM FEW065  
FM0700 VRB03KT 6SM BR SCT250  
TEMPO 0812 4SM FG  
FM1300 07005KT P6SM  
KIAD 282320Z 290024 3300  
FM0100 VRB05KT P6SM  
FM0500 00000KT 6SM BR FEW080
```

FG or FZFG forecast requires visibility < 5/8SM,
MIFG requires visibility >= 5/8SM
(NWSI 10-813, 1.2.6)

AvnFPS Guidance Display

The screenshot displays the AvnFPS Guidance Display interface. At the top, the Site ID is set to KALB. Flight Categories are VFR, MVFR, IFR, and LIFR. Below this are tabs for Metars, All Metars, AVN-MOS, NGM-MOS, ETA-profile, and Grids. A 'Get Data' button is present, along with checkboxes for 'Show Formatted' and 'Show Probabilities'. The main display area shows AVN MOS Guidance for KALB 281200Z, listing various flight levels (FM) with associated wind, visibility, and weather conditions.

Site ID: KALB Flight Categories: VFR MVFR IFR LIFR

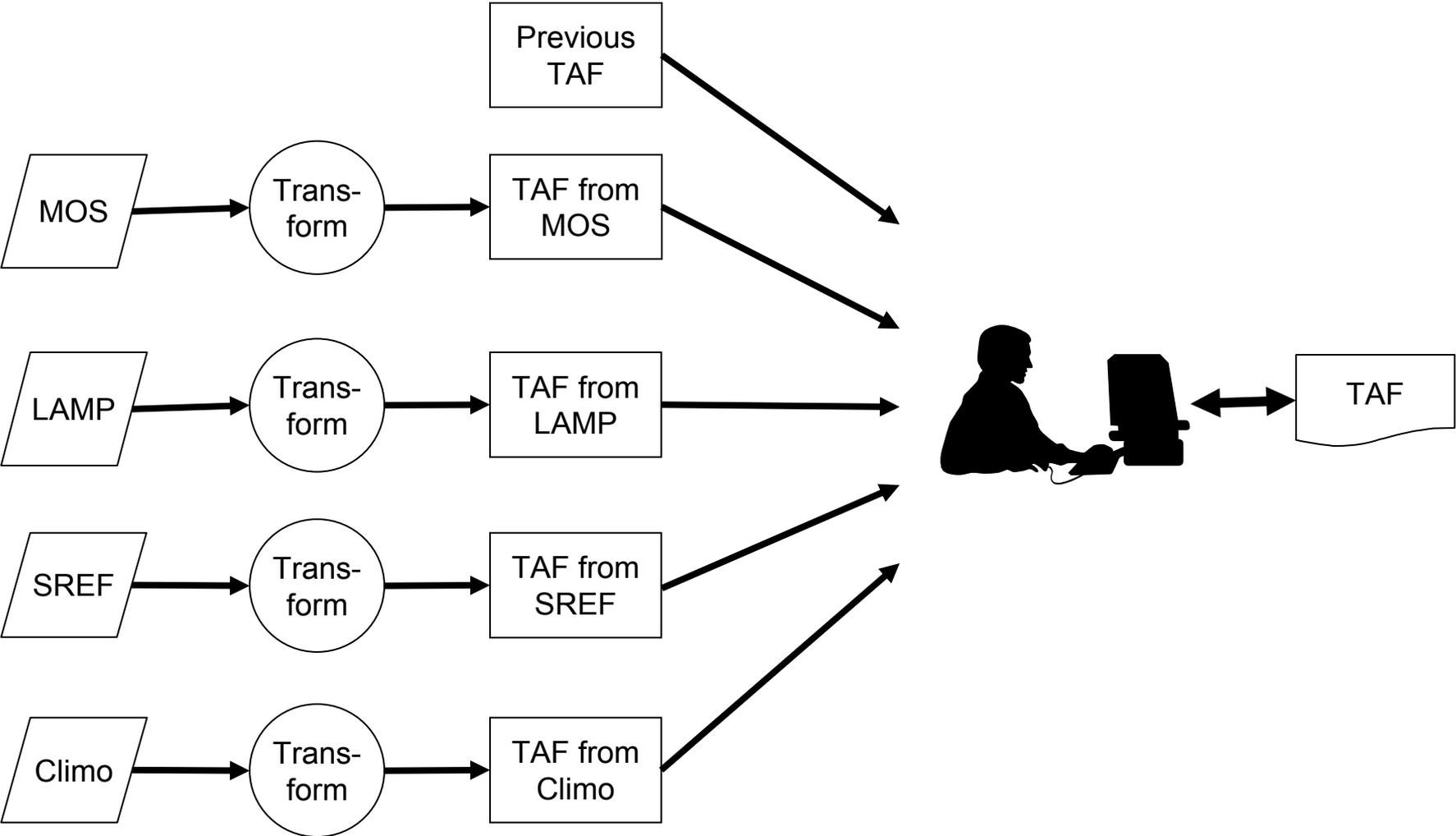
Metars All Metars AVN-MOS NGM-MOS ETA-profile Grids

Get Data Show Flight Category Show Formatted Show Probabilities

AVN MOS Guidance
KALB 281200Z

FM1800	0000KT	P6SM	-DZ	OVC020	
FM2100	0000KT	P6SM	-RA	OVC020	
FM0000	0000KT	6SM	-RA	BR	OVC050
FM0300	0000KT	P6SM	-RA	OVC100	TEMPO 0003 RA
FM0600	0000KT	6SM	BR	SCT250	TEMPO 0306 RA
FM0900	0000KT	2SM	BR	SKC	
FM1200	0000KT	2SM	BR	SCT004	
FM1500	0000KT	P6SM	SKC		
FM1800	23003KT	P6SM	SCT250		
FM2100	24005KT	P6SM	SCT250		
FM0000	20001KT	P6SM	SCT250		
FM0300	18001KT	P6SM	SKC		
FM0600	0000KT	P6SM	SKC		
FM0900	0000KT	6SM	BR	SKC	
FM1200	17001KT	P6SM	SKC		

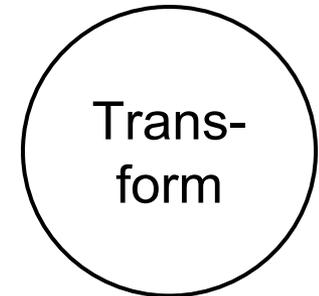
Current Plan: Assemble TAF from Guidance “Forecaster as Integrator”



Creating TAFs from Guidance

Forecaster as Integrator

- Each guidance source has quirks. None provides *exactly* the weather elements needed in *exactly* the form needed.
 - Categories to continuous values
 - Missing weather elements
 - Three-hourly resolution
- Sources
 - NGM/AVN/Eta MOS
 - Localized Aviation MOS Program (LAMP)
 - Developed specifically for TAF needs
 - Short Range Ensemble Forecast (SREF)
 - Conditional Climatology



Forecaster as Integrator

- Presents forecaster with multiple drafts, derived from various sources.
- Forecaster “assembles” TAF by choosing among options.
- Forecaster performs final edit.

Guidance TAF Options

- MOS forecasts are valid at 3-h time projections and contain no cloud layer information.
- Each SREF run can generate 15 TAFs for each gridpoint. What's the best way to use them?
- Expect little skill from Climo beyond 2 h.
- LAMP will yield enough time projections and weather elements to generate complete TAFs.

LAMP Status

- Initial research nearing completion.
 - Cloud layers a special problem.
- Beginning forecast equation development for all weather elements for one start time.
- Each start time becomes operational as it is completed.
- Full set of 24 start times needed.

Schedule and Options

Task	Current Schedule	Options
TAF Integration Tools	Late FY05	None
1 LAMP start time	End FY05	None
6 LAMP start times	End FY06	Additional resources could help.
12 LAMP start times	End FY07	Additional resources could help.
24 LAMP start times	End FY08	Additional resources could help.

Options for the Future

- Begin to investigate software as integrator of different guidance sources.
 - Challenge: How to decide objectively among guidance sources.
 - Key to success: Improved verification techniques.